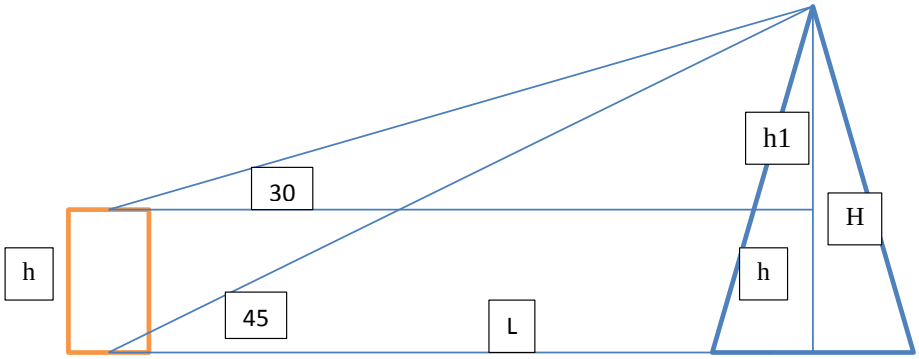
The angle of elevation of the top a rock from the top and foot of a 100m high tower are 30 and 45 degree.Find the height of the rock.




$$h = 100\ m$$

$$H = h_1 + h = L * \sin 45$$

$$h_1 = L * \sin 30$$

$$L * \sin 30\ + h = L * \sin 45$$

$$L = \frac{h}{\sin 45 - \sin 30}$$

$$H = L * \sin 45 = \frac{h}{\sin 45\ - \sin 30} * \sin 45$$

$$Calculation$$

$$H = \frac{100}{\sin 45\ - \sin 30} * \sin 45 \approx \mathbf{341.42\ m}$$

Answer: 341.42 m